

# K-5 STEAM CLUBS, CAMPS & CURRICULUM UNITS FOR **TINKERS**, **MAKERS** & **FUTURE INNOVATORS**

SCIENCE

TECHNOLOGY

ENGINEERING

ART

MATHEMATICS



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# STEAM start

## Combine Modular Units to Customize Your STEAM Program

Through STEAMStart, storytelling is the catalyst for project based learning that helps young kids visualize and problem solve.

There are eight STEAMStart units. In each one students help the story's main character through various challenges using the engineering design process!

Each unit includes six stories & challenges. Each story is based on a core idea related to key science, technology, engineering, art and mathematics concepts or skills.

### K-2 Club & Classroom

Choose one or all eight STEAMStart Unit(s). Each unit is approximately 8 to 10 hours of activity that can be broken up to meet your scheduling needs.

**WORLD GOES ROUND:** motion, circles & cylinders, aerospace design

**UP ON THE ROOF:** attributes, triangles & pyramids, geophysical design

**TINY HOUSE:** living things / needs, 2D and 3D figures, geophysical design

**TAKE FIVE:** basic needs & habitats, pentagons, industrial design

**RHOMBI'S CANDIES:** mobility, regular shapes

**HOUSE ON WHEELS:** weather, squares & cubes, geophysical design

**PET'S PLAYGROUND:** basic needs & habitats, pyramids, structural design

**TINKERMAKER TOYS:** lights and motion, gears & circuits, mechanical design

### K-2 Camp

One STEAMstart Unit in One Week

Monday **SCIENCE**

Tuesday **TECH & MATH**

Wednesday **ENGINEERING**

Thursday **ART**

Friday **UNIT CHALLENGE**

### 3<sup>rd</sup> - 4<sup>th</sup> Camp





One STEAMstart Unit Each Day





Choose 4-5 Units for an aggressive camp week that meets the needs of older students.



# CHOOSE 1 OR MORE UNITS

Each unit includes six stories & activities, each with a core idea related to science, technology, engineering, art and mathematics concepts or skills.

UNIT DESCRIPTION				
Unit	World Goes Round	Up on the Roof	Tiny House Challenge	Take 5
				
<b>Unit Focus</b>	<p>motion</p> <p>circles &amp; cylinders</p> <p>aerospace design</p>	<p>attributes</p> <p>triangles &amp; pyramids</p> <p>geophysical design</p>	<p>living things / needs</p> <p>2D and 3D figures</p> <p>geophysical design</p>	<p>basic needs &amp; habitats</p> <p>pentagons</p> <p>industrial design</p>
<b>Science Activity</b>	Observe light & shadow. Design and construct a moon cycle shadow puppet theater & performance.	Observe and test materials in wet conditions to determine the most water-resistance / waterproof combinations.	Explore and create habitats for animals in a fictional biome.	What's in a pentagon? Take a closer look at the ground inside a regular pentagon.
<b>Technology Activity</b>	Observe the tools used to create circles on paper. Design and construct a circle-making tool like the "spirograph" or compass.	Visit virtual pyramids. Design and construct pyramids with a variety of squares to match base area to angle.	Design your "wild self." Then construct a "wild you" jointed scale model.	Optimize and innovate by designing a tool to improve life in the classroom.
<b>Engineering Activity</b>	Observe rotation in gears and machines. Design, construct, and test a rotating cam and gear.	Build the tallest possible pyramid in a mystery bag challenge. Then redesign using materials of choice.	Explore structures with platforms. Build square to cube and triangle to pyramid sculptures.	Isolate materials to test in seasonal weather conditions by region. Create an outdoor -enabled art installation.
<b>Art</b>	Observe circles in art through the work of "Kandinsky." Design and create a piece of art using concentric and overlapping circles.	Create mixtures and solutions to explore "brick and mortar."	Explore Cubist art. Translate an image into polygons and quadrilaterals with an overly technique.	Discover the fun of informational text within a comic strip. Talk about pentagons!
<b>Math</b>	Observe pi. Design, construct, and test a cylinder to hold spheres of dough or marbles.	Create a sand and clay block pyramid that stands up to wind and water drop tests..	Explore geometric nets for cubes. Design and construct a "cube of cubes."	Walk the walls of the pentagon and build its scale model (well, the walls, anyway).
<b>Unit Challenge</b>	Design, create, and test a moon rover.	Design, construct, and test a waterproof A-frame structure.	Design, construct, and test a Tiny House on Wheels.	Design and construct 3-dimensional signage for your location or a scale model.
<b>Unit Kits for 15 Kids</b>	<b>SST-CC-WGR \$425</b>	<b>SST-CC-UR \$425</b>	<b>SST-CC-RRB \$425</b>	<b>SST-CC-T5 \$425</b>
<b>Consumables for +10 Kids</b>	<b>SST-CC-WGR10c \$229</b>	<b>SST-CC-UR10c \$229</b>	<b>SST-CC-RRB10c \$229</b>	<b>SST-CC-T510c \$229</b>

UNIT DESCRIPTION				
Unit	<b>Rhombi's Candies</b> 	<b>Tiny House on Wheels</b> 	<b>Pet's Playground</b> 	<b>TinkerMaker Toys</b> 
<b>Unit Focus</b>	mobility regular shapes	weather squares & cubes geophysical design	basic needs & habitats pyramids structural design	lights and motion gears & circuits mechanical design
<b>Science Activity</b>	Investigate floating and sinking with clay boats, rafts, and other ways to move objects across water.	Explore the science of wind. Design, construct, and test structural walls.	Investigate basic care of pets. How do animals play? Collaborate to design and construct a rescue shelter.	Design and create a scale model moon rover that travels across sandy, dusty surfaces!
<b>Technology Activity</b>	Take things apart to see how they work, and upcycle the parts in cool characters that you design!	Explore tech behind accidental inventions. Design, construct, and test a problem-solving invention.	Investigate erosion. Design, construct, and test ways to protect pyramid structures in various conditions.	Design and construct a sturdy Tiny House and chassis to haul the house.
<b>Engineering Activity</b>	Design and construct a rolling wagon with wheels to investigate wheel and axle options.	Explore mobility. Design, construct, and test a way to move materials using wheel & axle.	Investigate triangles and pyramids in structures. Design, construct, and test a "hamster slide." Redesign.	Construct a multimedia bridge with laser cut shapes to launch & test a gravity vehicle.
<b>Art</b>	Design the graphics for your Candy Cart using regular polygons and quadrilateral shapes.	Explore Cubist art. Translate an image into polygons and quadrilaterals with image overlays.	Investigate triangle patterns in quilts. Design and create a repeating triangle pattern in fabric or cut paper.	Fold cool shapes, and light them up with LEDs and parallel circuits. Make puppets and bookmarks!
<b>Math</b>	Use laser cut shapes, tapes, and nets to design folding packaging options for your candy cart business.	Explore geometric nets for cubes. Design and construct a "cube of cubes."	Investigate nets. Design and construct a triangular pyramid of triangular pyramids called a tetrahedron.	Use the engineering design process, motor, switch, and circuits to construct and test a 3D Wobbly 'Bot.
<b>Unit Challenge</b>	Design and construct Rhombi's Candy Cart to move X material.	Design, construct, and test a Tiny House on Wheels.	Design, construct, and test playground structures for a pet.	Design, construct, and test a "Rube Goldberg" kinetic marble track.
<b>Unit Kits for 15 Kids</b>	<b>SST-CC-RC</b> \$425	<b>SST-CC-RRB</b> \$425	<b>SST-CC-PG</b> \$425	<b>SST-CC-TMT</b> \$785
<b>Consumables for +10 Kids</b>	<b>SST-CC-RC10c</b> \$229	<b>SST-CC-RRB10c</b> \$229	<b>SST-CC-PG10c</b> \$229	<b>SST-CC-TMT</b> \$400